

STATUS OF THE CLAIMS

Claims 4, 6 and 11 are pending in the application.

Claims 4, 6 and 11 were objected to because the application lacked a readable CRF.

Claim 11 was rejected under 35 USC§102 as being anticipated by Mets.

REMARKS

Summary of the Invention

The enzyme, iron hydrogenase (HydA), has industrial applications for the production of hydrogen, specifically, for catalyzing the reversible reduction of protons to molecular hydrogen. The present invention relates to the isolation of a nucleic acid sequence from the algae *Scenedesmus obliquus*, *Chlamydomonas reinhardtii*, and *Chlorella fusca* that encodes iron hydrogenase. The invention further discloses the genomic nucleic acid, c-DNA and the protein sequences for HydA. The genes and gene products may be used in a photosynthetic process for hydrogen production which includes growing a microorganism containing the gene coding for HydA in a culture medium under illuminated conditions sufficient to accumulate an endogenous substrate; depleting a nutrient selected from the group consisting of sulfur, iron, and manganese from the medium; then allowing the culture to become anaerobic by consumption of an endogenous or exogenous substrate in the light.

The Rejection Under 35USC§102

Claim 11 was rejected under 35USC§102 as being anticipated by Mets. Briefly, L. J. Mets submitted (to GenBank) a nucleotide sequence for DNA encoding a hydrogenase that is identical to SEQ ID NO: 5 of the present application. The Mets submission to

GenBank was made on July 24, 2000 and entered under Accession Number AF289201. A copy of the Mets submission showing the submission date is enclosed herewith. The present inventor was the first to submit SEQ ID NO. 5 to GenBank. In fact, the sequence of the present invention, designated SEQ ID NO. 5, was submitted to GenBank by the present inventor on October 15, 1998, under Accession No. AJ012098. At the present inventor's request, the sequence data (SEQ ID NO. 5) was kept confidential by the EMBL until November 12, 2001.

The present application claims the priority of an earlier provisional application Serial No. 60/269,872, filed 2/16/01. The present inventor's submission to GenBank preceded the submission of Mets by nearly 2 years (21 months). The provisional application was filed prior to the public disclosure of SEQ ID NO. 5 by GenBank. GenBank has no mechanism for preventing submission of duplicate, redundant or even copied sequences. Accordingly, inasmuch as the present inventor's submission date predates the Mets submission by 21 months, the present inventor is the first inventor of SEQ ID NO. 5. In view of the foregoing facts, it is respectfully requested that this grounds for rejection be withdrawn.

The Objection to the Claims

The claims of the application were objected to because they refer to a sequence identifier but that the application lacks a readable CFR. Applicant notes that the sequence data was originally submitted on a floppy disc when the application was filed. The formatting requirements for submitting sequence data were changed and a new CRF was

submitted. The sequence data has again been reformatted in accordance with the latest requirements of the USPTO and a new CRF comprising SEQ ID NO'S. 1-9 encoded on a compact disc is enclosed herewith. Applicant respectfully submits that the sequence data on the enclosed CRF overcomes the objection, and an indication to this effect is respectfully requested.

Entry of this amendment, reconsideration, favorable action and early allowance and publication of this application are respectfully requested. If there are any minor matters remaining, it is respectfully requested that the examiner contact the undersigned by phone so that possible minor changes may be discussed in order to expedite the prosecution of this case.

Respectfully,



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Date: February 18, 2004

by:



Michael G. Petit